
New Species of *Swartzia* (Fabaceae: Faboideae) from Amazonia

John J. Pipoly III

Missouri Botanical Garden, P.O. Box 299, St. Louis, Missouri 63166-0299, U.S.A.

Agustín Rudas Ll.

Missouri Botanical Garden, Apartado Aéreo 241598, Santafé de Bogotá, Colombia

ABSTRACT. Studies in Amazonian plant diversity have revealed the presence of two new species of *Swartzia*, *S. oscarpintoana* Pipoly & Rudas and *S. gracilis* Pipoly & Rudas.

RESUMEN. Estudios en diversidad vegetal amazónica revelaron la presencia de dos nuevas especies del género *Swartzia*, *S. oscarpintoana* Pipoly & Rudas y *S. gracilis* Pipoly & Rudas.

***Swartzia oscarpintoana* Pipoly & Rudas, sp. nov.**

TYPE: Colombia. Amazonas: Mpio. La Pedrera, Inspección Santa Isabel, Parque Nacional Natural Cahuinari, Río Cahuinari, 01°28'S, 70°46'W, 300 m, 29 Nov. 1990 (fr), *J. Pipoly, A. Rudas et al. 12886* (holotype, COL; isotypes, F, FMB, GH, K, MO, NY, US). Figure 1.

Quoad stylum terminalem, stigma capitellatum atque ovarium arcuatum fusiformeque, praeclare ad sectionem *Terminalem* pertinet, et intra has propter ramulos dense chocolatio-nitido-velutinos, foliola imparipinnata coriacea supra nitida subtus dense chocolatio-velutina, inflorescentiam ramulinam racemosamque allopatricae *S. pictae* valde arcte affinis, sed ab ea pedicellis cylindricis (non clavatis), bracteis caducis (non persistentibus), lobulis calycinis 5-6 (non 4), gynophoro ovarioque dense adpresso-velutino (non glabro) denique stylo 8-12 (non 5-7) mm longo statim separabilis.

Tree to 40 m tall × 38 cm DBH; branchlets, stipules, petioles, leaf rachis, petiolules, and abaxial leaflet surface velvety with shiny chocolate-brown hairs; branchlets strongly 6-10-ribbed, the ribs rounded, disappearing with age, 5-10 mm diam.; pith moderately hard. Stipules caducous, coriaceous, extremely widely ovate, 5-7 mm long, 6-8 mm wide, apex rounded, velutinous without, glabrous within, the margin entire. Leaves imparipinnate; petioles terete, 0.5-1 cm long, conspicuously pulvinate; rachis subterete, slightly canaliculate adaxially, (10-)14-19.5 cm long, stipellate at each pair of leaflets, the stipels coriaceous, ovate, 2-3 mm long, 2-2.5 mm wide, apex acute, densely velutinous; petiolules subterete, 2-3.5 mm long, densely ve-

lutinous; leaflets 4-6-jugate, coriaceous, dimorphic, the basal pair obovate to oblanceolate, (4.5-)5-6.5(-9) cm long, 2.2-3 cm wide, apex short-acuminate, base truncate, the midrib impressed above, prominently raised below, secondary veins 12-16 pairs, nitid and punctate above, densely velutinous below, the margin revolute, entire; other leaflets narrowly oblong to narrowly oblanceolate, (7.5-)11-16 cm long, (1.8-)2.5-3(-4) cm wide, the apex abruptly acuminate, the acumen 0.7-1 cm long, the base obliquely truncate to subcordate, the midrib impressed above, prominently raised below, secondary veins 10-14, nitid and punctate above, densely velutinous below, the margin revolute, entire. Inflorescence ramuligerous, a simple axillary raceme, 10-20(-23) cm long; rachis erect, velvety with shiny chocolate-brown hairs; floral bracts coriaceous, ovate, 0.8-1.2 mm long, 0.6-0.8 mm wide, the apex acute, glabrescent above, densely velutinous below, caducous; bracteoles obsolete, without scars; pedicels cylindrical, 2-3(-5) mm long; calyx stiffly coriaceous, rupturing into 5-6 irregular lobes at maturity, 7-15 mm long, 3-6 mm wide, apex acute, densely appressed-velutinous without, glabrous within; corolla and androecium unknown; gynophore 1-2.5 cm long, the ovary fusiform, arcuate, 15-30 mm long, 3-5 mm diam., densely appressed-velutinous, the style black, 8-12 mm long, the stigma capitellate. Fruit, unknown.

Distribution. Known only from the type, collected in Amazonas, Colombia, 300 m elevation.

Ecology. *Swartzia oscarpintoana* grows in várzea forest on lateritic soils (rebalse alto), dominated by *Lepidocaryum tenue* Martius and *Astrocaryum jauari* Martius. It is a common element of the canopy at the margin of the várzea forest, on deep alluvial deposits near the *terra firme* transition zone.

Etymology. This species is named for Oscar Hernando Pinto, former regional director of INDERENA for the Amazon Basin of Colombia, whose collaboration and interest in the promotion of national parks as biodiversity research centers has

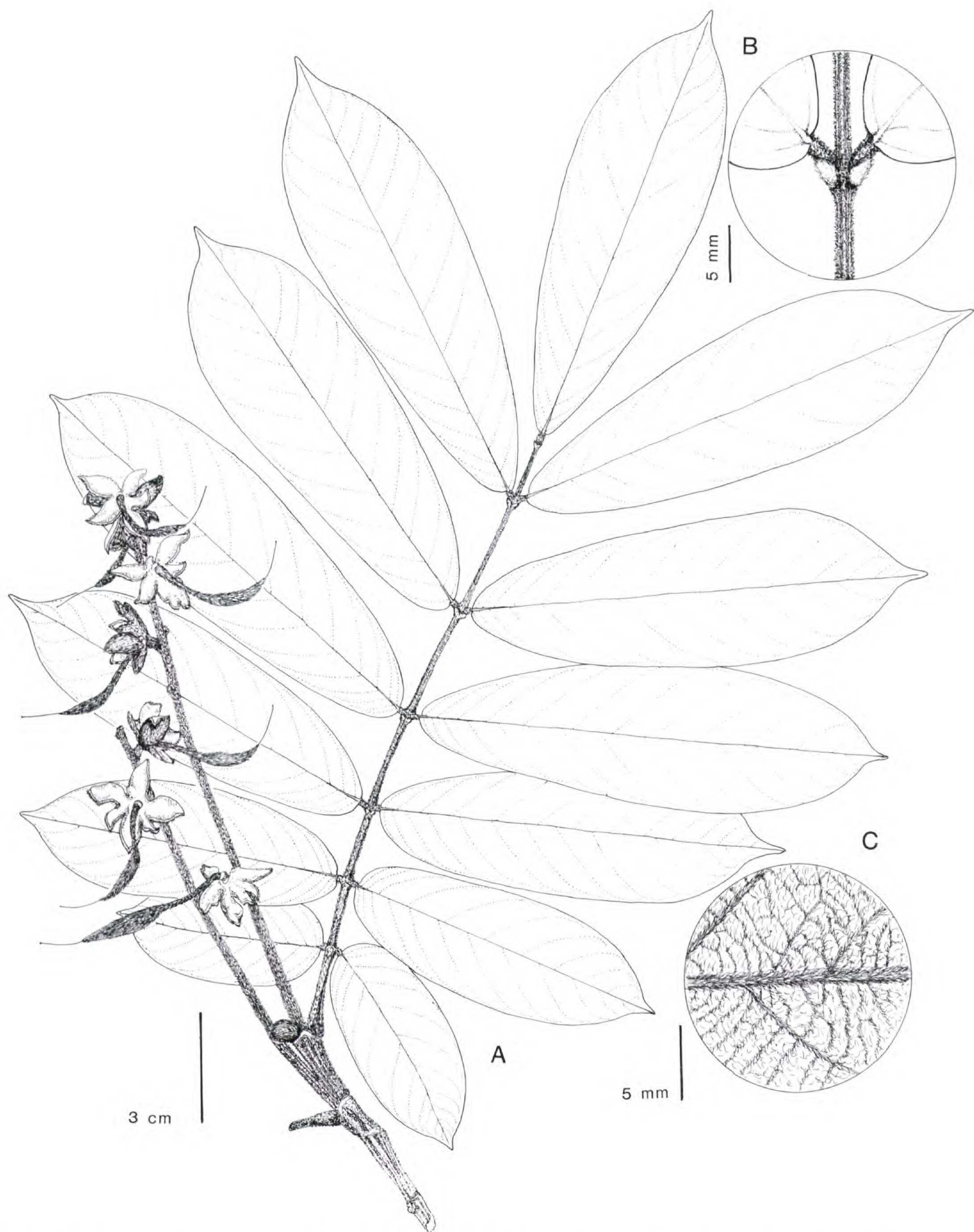


Figure 1. *Swartzia oscarpintoana* Pipoly & Rudas. — A. Flowering branchlet showing cylindrical pedicels, velutinous inflorescence rachis, gynophore, and ovary. — B. Leaflet pair, showing obliquely truncate bases, ovate stipules, and subterete leaf rachis. — C. Close-up of abaxial leaf surface, showing nitid-velutinous tomentum. A–C, drawn from the isotype.

permitted teaching and basic research in the Amazonian national parks of Colombia.

The terminal style, capitellate stigma, and arcuate and fusiform ovary indicate that *Swartzia oscarpintoana* belongs to section *Terminales*. Among the

species of that section, the brown nitid-velutinous tomentum of the branchlets and abaxial leaf surfaces concomitant with the coriaceous leaves and racemose ramuligerous inflorescences indicates a close relationship to *S. picta* Spruce ex Benth. How-

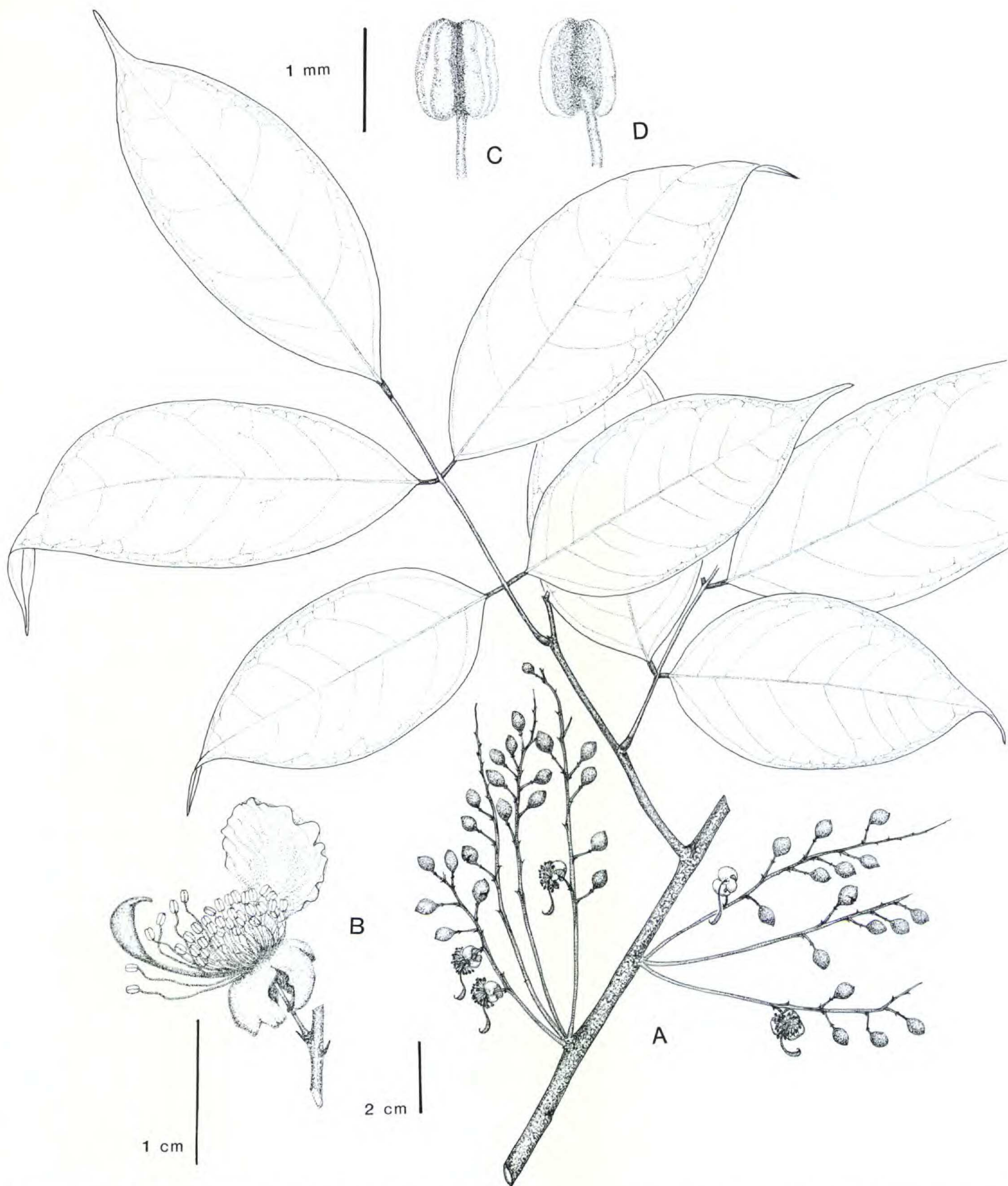


Figure 2. *Swartzia gracilis* Pipoly & Rudas. —A. Flowering branchlet showing ramuligerous inflorescences of fascicles of racemes. —B. Flower, showing suborbicular petal blade, falcate ovary, and punctiform stigma. —C. Anther, adaxial view. —D. Anther, abaxial view, showing darkened connective. A–D, drawn from the holotype.

ever, *Swartzia oscarpintoana* is readily separated from *S. picta* by the cylindrical pedicels, caducous floral bracteoles, 5–6-lobed calyx, the velutinous gynophore and ovary, and longer style.

Swartzia gracilis Pipoly & Rudas, sp. nov. TYPE: Peru. Loreto: Dto. Iquitos, Estación Experimental del IAAP, Allpahuayo, Inventario Per-

manente, 04°10'S, 73°30'W, 150 m, 22 Mar. 1992 (fl), R. Vásquez, S. Vásquez & N. Jaramillo 17951 (holotype, AMAZ; isotypes, COL, F, G, K, MO, NY, US, USM). Figure 2.

Propter stylum punctiformem, ovarium obovoideum, gynoecium glabrum, pedicellum bracteolis praeditum necnon foliola 1–4-juga ad sectionem *Swartziam* seriem *recurvam* pertinet; intra has quoad ramulos et inflorescen-

tiae rhachim dense minuteque aureo-malpighio-strigulosos, certeque perianthium glabrum *S. leiocalycinae* valde arcte affinis, sed ab ea stipulis late triangularibus (non deltatis) 1–1.3 (nec 0.5–0.7) mm longis, 1.1–1.5 (nec 0.5–0.7) mm latis, folii rhachide angulata (nec canaliculata), foliolis chartaceis (non coriaceis) ad bases acutis (nec rotundatis), petiolulis 6–8 (non 3–5) mm longis, inflorescentiis racemosis fasciculatis (nec paniculatis), bracteis 1 et bracteolis 2 (non 1) ad pedicelli basim atque apicem (nec non nisi ad basim tantum) insertis, denique staminibus majoribus 6 (non 2) praeclare distinguitur.

Subcanopy tree to 30 m tall, 45 cm DBH; branchlets terete, 2–4 mm diam., densely and microscopically golden biramous-strigulose, glabrescent; stipules chartaceous, widely triangular, 1–1.3 mm long, 1–1.5 mm wide, apex acute, densely biramous-strigulose, the margin entire, caducous. Leaves paripinnate or imparipinnate; petioles, rachis, and petiolules minutely biramous-strigulose; petioles very narrowly canaliculate, 5–7 mm long, conspicuously pulvinate, glabrous; rachis subterete, angulate, (4.5–)6–9(–12) cm long, stipels absent, distal rachis mucron 3–5 mm long, caducous; petiolules terete, adaxially very narrowly canaliculate, 6–8 mm long, glabrescent; leaflets 1–4-jugate, chartaceous, monomorphic, oblong to ovate, 7–14 cm long, (3.5–)4–6(–8) cm wide, apex caudate-acuminate, base acute, midrib slightly raised above, prominently raised below, the secondary veins 22–30 pairs, glabrous, nitid and epunctate above, pallid below, the margin flat, entire. Inflorescence ramuligerous and ramigerous, a fascicle of (1–)2–6 simple racemes, rarely axillary, 3.5–10 cm long; rachis erect, densely and microscopically golden biramous-strigulose; floral bract at pedicel base 1, chartaceous, subulate, 1–1.2 mm long, 0.1–0.2 mm wide, the apex acute, densely biramous-strigulose, the margin entire; bracteoles paired, inserted ca. $\frac{3}{4}$ length of pedicel from base, chartaceous, subulate, 0.7–0.8 mm long, ca. 0.1 mm wide, the apex attenuate, densely strigulose, the margin entire; pedicels cylindrical, 5–7 mm long; calyx stiffly coriaceous, rupturing into 3 highly reflexed lobes at maturity, the lobes 6–8 mm long, 3–6 mm wide, glabrous; petal yellow, unguiculate, glabrous, the claw 3–5 mm long, the blade suborbicular, 4–6 mm long and wide, the apex truncate,

the margin irregular, entire; larger stamens 6, 7–8 mm long, the filaments yellow, 6–7 mm long, the anthers oblong, 0.8–1 mm long, 0.6–0.8 mm wide, apex and base emarginate, the connective darkened dorsally; smaller stamens numerous, 0.5–0.6 mm long, the filaments 0.4–0.5 mm long, the anthers quadrate, 0.8–1 mm long and wide, the connective darkened dorsally; torus below gynoecium sparsely and minutely glandular-granulose; gynoecium glabrous, the gynophore 7–9 mm long, the ovary falcate, 5–6.5 mm long, 1.5–1.8 mm wide, abruptly curved apically, the style 0.7–1 mm long, the stigma punctiform. Fruit unknown.

Distribution. Endemic to the Iquitos area of Amazonian Peru and adjacent Brazil, at 150 m elevation.

Ecology. *Swartzia gracilis* is a subcanopy tree in tall *terra firme* moist forests on deep white sands.

Etymology. The epithet refers to the slender nature of the inflorescence in relation to the leaves.

The punctiform style, obovoid ovary, glabrous gynoecium, bracteolate pedicels, and 1–4-jugate leaflets clearly place *Swartzia gracilis* in section *Swartzia* series *recurvae* Cowan. Within that series, the densely and minutely golden biramous-strigulose hairs of the inflorescence rachis and branchlets and the glabrous perianth indicate a very strong relationship to *S. leiocalycina* Benth, a species from the Guianas. However, the angulate foliar rachis, chartaceous leaflets with obtuse bases, longer petiolules, inflorescence consisting of a fascicle of racemes, three bracteoles with two at the top of the pedicel and one at the bottom, and longer stamens all serve to distinguish *Swartzia gracilis*.

Paratype. BRAZIL. **Amazonas:** Rio Javari, Rio Curacá, 8 mi. above (S of) mouth, 26 Oct. 1976 (fl), G. Prance et al. 24139 (INPA, MG, NY, US).

Acknowledgments. Our work in plant diversity and phytogeography in the Amazon Basin is supported by the generosity of the John D. and Catherine T. MacArthur Foundation. We are grateful to Roy Gereau for reviewing the manuscript and to Rodolfo Vásquez for providing the illustrations.